

HVDC Care upgrades Increase efficiency and performance in existing HVDC stations



After some years of operation, for example at midlife of the scheme, a life time assessment of certain equipment's or systems could be of advantage to maximize system lifetime and reduce downtime

Such assessments are available for all HVDC specific equipment within ABB, e.g. converter transformers, thyristor- and IGBT- valves and control equipment. For conventional AC equipment included in the HVDC scheme, e.g. breakers, disconnectors, filter reactors as well as cables, similar assessments are also available. By doing the assessments the owner will get a reliable estimate for the planning of future upgrade, service and operation.

Mid life upgrades of HVDC installations

Technology develops quickly, so when an installation has been in service for a number of years, it may be desirable to upgrade. Proactive upgrades can save operators time and money by avoiding equipment failure that can lead to severe outages. The lifetime for the control and protection system for HVDC stations can be expected to be around 30 years, but in HVDC installations 15 years and older some parts may require upgrading, depending on the general condition of the equipment and the availability of spare parts. The technical lifetime for thyristor valves is very long, probably around

50-60 years. Other examples of assets with a long practical life are overhead lines, cables, buildings, switchyards, and transformers. When parts of these assets are failing they can often be replaced on component basis, such as breakers, parts of a cable, single phase transformers etc.

Overall, an upgrade increases the lifetime of an installation.

An ABB upgrade can provide your HVDC station with a new control system, new functionality, and a new generation of hardware and software. A control system upgrade can be done with a relatively short system outage and has shown to be an efficient way to prolong a high performance of an HVDC link. To upgrade older installations, ABB adapts modern systems and equipment and integrates them into existing HVDC stations.

The many good reasons for carrying out a technical modernization include:

- Extending system lifetime
- Higher availability and reliability
- Better cost efficiency
- Improved performance
- Increasing operating efficiency
- Solving potential spare part problems
- Easier technical support
- Additional control features to handle addition of renewable energy in the system

Contact us

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